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GUS - 0076  
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24 December 1958

MEMORANDUM FOR: Special Assistant to the Director  
for Planning and Development

SUBJECT : Radar Program [REDACTED]

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1. The following is the program which was agreed to between [REDACTED] yesterday, 23 December.

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2. Tests of the 1/8 scale model using the unsoftened wing began 19 December 1958. These tests were conducted at 560 to 800 mc test frequencies which give a scale frequency of 70 to 100 mc. Although there were relatively minor differences in the 1/46 scale model tested [REDACTED] and the 1/8 scale model at [REDACTED] Frank is of the mind that the correlation between results at these two ranges at these frequencies is good.

3. Beginning yesterday, 23 December, the 1/8 scale model was to be tested at the same frequencies as above but incorporating the wing softening. These tests will continue as required to incorporate various experiments involving the wing softening effect.

4. Beginning the first full week of January, January 5, <sup>tests of</sup> the full scale mock-up of the engine air inlet and tail pipes will be made at S Band. This series of tests will be expanded as necessary to include various experiments with the scoop, such as the inclusion of wires or egg crates, etc.

5. Beginning at the same time, 5 January, experiments will begin utilizing test frequencies at approximately 70mc to determine the characteristics of the steel mast without a model in order to determine whether or not full scale tests at 70 mc can be made without undue return from the mast itself. Although this was thought to be impossible previously, Rodgers has had some new thoughts which justify this experiment.

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6. Similarly, test experiments using S Band test frequency will be made against the inflated bag at a half mile range in order to assess the lobing problem. Beginning 12 January the 1/8 scale model will be tested at S Band test frequencies using the 1/2 mile distant pole. This will give scale results at 400 mc.

7. Depending upon the results of the experiments at X Band it may be desirable during the week beginning 19 January to test the 1/8 scale model at K Band test frequency. Beginning the week of 26 January, using the as yet unbuilt full scale model, tests are planned at S and X Band on the steel mast and depending on the results of the experiments mentioned above also at 70 and 600 mc. Following this the full scale model will be placed atop the plastic mast for tests at 70 and at 600 mc. The reason for wanting to test the full scale model on the steel pole first is to get as much data as possible before risking model breakage in connection with testing on the plastic mast.

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8. It was emphasized [REDACTED] that the full scale model must incorporate simulations of all of the various discontinuities and changes in materials, etc., which occur in the actual aircraft. The model may not have all of these features when first delivered but as the tests progress these are to be incorporated.

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[REDACTED]  
EUGENE P. KIEFER

EPK:aml (24 Dec 1958)

- 1 - SA/PD/DCI
- 2 - Subject File
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